

CLAIMS

What is claimed is:

1. A process for making a DVD react with oxygen in the air so that once it is removed from the air-tight package the surface would obscure a fraction of the underlying data.
2. The process of claim 1 wherein the reaction would be with other constituents of air such as moisture or other gasses.
3. The process of claim 1 wherein the DVD reacts to light, such as the laser light that is used to read data, so that it could not be read again after some number of readings.
4. The process of claim 3 wherein the reaction might be a photochemical process similar to photography or the clouding of a substance when exposed to light.
5. The process of claim 3 wherein the light is ambient room light.
6. A process of removing a DVD from a package wherein an electrostatic or mechanical reaction occurs which sets in motion timed destruction of the data.
7. The process of claim 6 wherein the destruction motion is effected by a powered battery or release of energy.
8. The process of claim 6 also including a device that sets of timing when removing a DVD from a package that causes a seal to be broken thereby exposing either side of the data and which renders the DVD unusable after a certain period of time or a number of uses.
9. The process of claim 6 wherein the DVD player actively reads some encrypted indentifying information from the DVD and refuses to play it again.

10. A process for sudden degradation of the DVD so that there is minimal effect on the data for an initial period and then rapid loss of data.

11. An optical storage media comprising a substrate, a metal layer and a lacquer, wherein the substrate or the lacquer permit controlled exposure of the metal layer to air, said exposure degrading or destroying the ability to read the data on the optical storage media.

12. An optical storage media comprising a substrate, a metal layer and a lacquer, wherein the optical properties of the substrate change upon exposure of the substrate to air, said exposure degrading or destroying the ability to read the data on the optical storage media.

13. A packaged optical storage media comprising a substrate, a metal layer and a lacquer, wherein opening the package triggers a process that changes the optical properties of the substrate, said process degrading or destroying the ability to read the data on the optical storage media.

14. An optical media, comprising: a data encoded component, wherein at least a fraction of said data encoded component transforms from a substantially optically reflective state to a substantially optically non-reflective state as at-least-in-part a function of time from an initializing event.

15. The optical media of claim 14, wherein said at least said fraction of said data encoded component transforms as a result of exposure to at least one of the group consisting of oxygen, nitrogen, water and hydrogen sulphide.

16. The optical media of claim 14, further comprising a substantially gas impermeable membrane surrounding said optical media.

17. The optical media of claim 16, wherein said substantially gas impermeable membrane contains an inert gas.
18. The optical media of claim 16, wherein said substantially gas impermeable membrane contains a reducing gas.
19. The optical media of claim 14, wherein said at least said fraction of said data encoded component transforms as a result of at least one member selected from the group consisting of an exposure to light, a change in applied voltage, an exposure to mechanical stress, an exposure to at least one reactant contained in said optical media and an exposure to at least one reactant contained in a package that contains said optical media.
20. The optical media of claim 19, wherein said package includes a reducing gas pack that destroys a protective layer that is coupled to said data encoded component.
21. The optical media of claim 19, wherein said change in applied voltage includes removing a battery voltage source that maintains a metal layer that is coupled to said data encoded component in a reduced state.
22. The optical media of claim 19, wherein said data encoded component includes a light activated catalyst
23. The optical media of claim 14, further comprising a substrate coupled to said data encoded component and a layer of lacquer coupled to said data encoded component.
24. The optical media of claim 14, wherein said data encoded component includes a first metal film that includes at least one metal selected from the group consisting of Al, Mg and Ag.

25. The optical media of claim 24, further comprising a second metal film including at least one metal selected from the group consisting of Ag, Au and Cu coupled to said metal film.

26. The optical media of claim 24, further comprising a layer of lacquer coupled to said data encoded component and an exterior metal coating with ionic conductivity coupled to said layer of lacquer, said exterior metal coating including at least one element selected from the group consisting of silver, copper and thallium.

27. The optical media of claim 26, wherein said layer of lacquer includes at least one copolymer selected from the group consisting of poly(acrylonitrile), poly(4-vinylpyridine) and poly(1-vinylimidiazole).

28. The optical media of claim 26, wherein said layer of lacquer includes hydrolyzed polyacrylate lacquer.

29. The optical media of claim 26, wherein said layer of lacquer includes 2-hydroxyethylacrylate copolymer

30. The optical media of claim 24, wherein said data encoded component includes at least one chromophore.

31. A retail sale package, comprising the optical media of claim 14.

32. An optical disk, comprising: a substrate; a metal layer coupled to said substrate; and a lacquer coupled to said metal layer, wherein at least one member selected from the group consisting of said substrate and said lacquer permit controlled exposure of said metal layer to air, thereby degrading readability of data recorded on said optical disk.

33. A package containing an optical disk, said optical disk comprising: a substrate, a metal layer coupled to said substrate; and a lacquer coupled to said metal layer, wherein

opening said package triggers a process that changes reflective properties of said metal layer, thereby degrading an ability to read data recorded on said optical disk.

34. An optical media, comprising: a substrate, wherein at least a fraction of said substrate transforms from a substantially optically transmissive state to a substantially optically non-transmissive state as at-least-in-part a function of time from an initializing event.

35. The optical media of claim 34, wherein said at least a fraction of said substrate transforms as a result of exposure to at least one of the group consisting of oxygen, nitrogen, water and hydrogen sulphide.

36. The optical media of claim 34, further comprising a substantially gas impermeable membrane surrounding said optical media.

37. The optical media of claim 36, wherein said substantially gas impermeable membrane contains an inert gas.

38. The optical media of claim 36, wherein said substantially gas impermeable membrane contains a reducing gas.

39. The optical media of claim 34, wherein the transformation from said substantially optically transmissive state to said substantially optically non-transmissive state includes a change in at least one optical property selected from the group consisting of transparency and index of refraction.

40. The optical media of claim 34, wherein said at least a fraction of said substrate transforms as a result of an exposure to light, a change in applied voltage, an exposure to mechanical stress, an exposure to at least one reactant contained in said optical media and an exposure to at least one reactant contained in a package that contains said optical media.

41. The optical media of claim 40, wherein said substrate includes light activated catalysts.
42. The optical media of claim 40, wherein said package includes a reducing gas pack that destroys a protective layer that is coupled to said substrate.
43. The optical media of claim 34, wherein said at least a fraction of said substrate transforms as a result of a change in permittivity of gas through said substrate, a crystallization of a polymer that composes said substrate, a photodepolymerization of said substrate, a photogeneration of acid in said substrate and a photogeneration of singlet oxygen in said substrate.
44. The optical media of claim 34 wherein said substrate includes an antioxidant.
45. The optical media of claim 44, wherein said antioxidant includes an organometallic.
46. The optical media of claim 34, further comprising a data encoded component coupled to said substrate.
47. The optical media of claim 34, further comprising a layer of lacquer coupled to said data encoded component.
48. A retail sale package, comprising the optical media of claim 34.
49. A method of making an optical media, comprising:
providing a substrate;
coating a reflective layer on said substrate;
exposing said substrate to a reversing environment to increase optical transmissivity of said substrate; and then

exposing said substrate to a preserving environment to maintain optical transmissivity of said substrate.

50. The method of claim 49, wherein said substrate includes polycarbonate and salts mixed with said polycarbonate.

51. The method of claim 50, wherein the salts interact with at least one atmospheric component selected from the group consisting of O₂, CO₂ and H₂O to form opaque compounds.

52. The method of claim 51, wherein said reversing environment includes hydrogen and said opaque compounds are disassociated by said reversing environment.

53. An optical media made by the method of claim 49.

54. An optical disk, comprising: a substrate; a metal layer coupled to said substrate; and a lacquer coupled to said metal layer, wherein optical properties of said substrate change upon an exposure of said substrate to air, said exposure degrading readability of data recorded on said optical disk.

55. A package containing an optical disk, said optical disk comprising: a substrate, a metal layer coupled to said substrate; and a lacquer coupled to said metal layer, wherein opening said package triggers a process that changes optical properties of said substrate, thereby degrading an ability to read data recorded on said optical disk.

56. An optical disk comprising a substrate, a metal layer and a lacquer, wherein exposure to air or removal from the package or removal of a cover or an action undertaken by the user triggers a process degrading or destroying the ability to read the data in the directory or table of contents area of the disk, thereby rendering the disk unplayable.

57. An optical disk with a material applied in trenches or pores, possibly in addition to a coating of the same or different material, that changes upon exposure to the environment

or because of a user action, said exposure degrading or destroying the ability to read the data on the disk, because of changes in the optical or physical properties of the material, either solely or in combination with the shape of the trenches or pores.

58. A packaged optical disk comprising a substrate, a metal layer and a lacquer, wherein opening the package and/or exposure to air triggers a process that changes the physical characteristics of the disk, said process degrading or destroying the ability to read the data on the disk.

59. An optical disk comprising a substrate, a metal layer and a lacquer, wherein the centrifugal force and/or mechanical stresses inherent in playing the disk trigger a process that changes the optical or physical properties of the disk, said process degrading or destroying the ability to read the data on the disk.